

22 BRAKES

The caliper is self-adjusting. When the piston moves and presses on the brake pads, the seal is distorted slightly. When the pressure is removed, the seal returns to its normal shape and pulls the piston back slightly, creating a small gap between pad and rotor to minimize wear. As the pads wear, the seal moves with the piston, so the gap always remains about the same.

Brake fluid leaks around the brake caliper piston are the result of a failed or damaged piston seal, perhaps caused by corrosion, scoring, or pitting of the piston or caliper bore. The seal can be replaced, but a damaged piston will promptly destroy the new seal. To remedy a leaking caliper piston seal and avoid future problems, complete replacement of the caliper is recommended. A damaged caliper dust seal can be replaced separately.

To remove:

1. Raise the front of the car and support it securely on jack stands. Remove the front wheels.
2. When working on the left wheel: Disconnect the pad wear indicator connector as shown above in Fig. 5-2.
3. Loosen the hose fitting on the caliper. Remove the two mounting bolts from the steering knuckle. See Fig. 5-11.
4. Disconnect the brake hose from the caliper by spinning the caliper off the fitting. Drain the brake fluid into a container. Cap the end of the brake line to prevent dirt and moisture from entering the brake system.

CAUTION

Do not let brake fluid contaminate the brake pads or brake rotor surface.

Installation is the reverse of removal. Start all brake line fittings by hand to avoid cross-threading. Torque the brake hose fitting to 13 to 16 Nm (9 to 12 ft. lb.).

Bleed the brakes as described in **4.2 Bleeding Brakes**. When working on the left wheel: Reconnect the pad wear indicator connector. Torque the caliper mounting bolts to 110 to 123 Nm (80 to 89 ft. lb.).

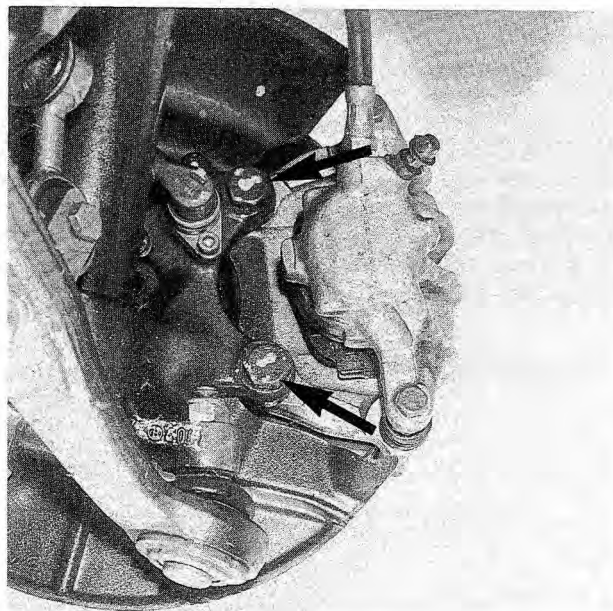


Fig. 5-11. Front brake caliper mounting bolts (arrows).

6. REAR DRUM BRAKES

Fig. 6-1 is an exploded view of the rear drum brake assembly used on 318i models. Retaining springs hold the brake shoes in place. The shoes rest against a fixed bracket at the top of the backing plate. When the brakes are applied, the wheel cylinder pushes against the bottoms of the shoes to force them against the brake drum. Return springs retract the brake shoes when the brakes are released.

The rear drum brakes are equipped with a self-adjusting mechanism which compensates for wear and thermal expansion. At the bottom of the forward brake shoe, a spring loaded lever rests against an adjusting wheel on the adjusting bar. As the brake lining wears and brake shoe travel increases, the lever automatically advances the adjusting wheel, lengthening the adjusting bar and keeping the brake shoes from retracting too far from the drum.

To prevent the self-adjusting mechanism from making incorrect adjustments when the brake is hot, a thermo-clip is incorporated in the adjusting bar. The thermo-clip changes the length of the adjusting bar based on temperature, to compensate for heat generated by brake friction.

Because the rear brakes do less of the work of stopping the car, they are not likely to wear as quickly or require service as frequently as the front brakes. Unless problems obviously affect only the rear brakes, brake troubleshooting should always include the front brakes. If the rear brakes are worn and require